

What is claimed is:

1. A method for detecting tactile information on touch force and the like acting on measurement points, based on outputs from bridge circuits constituted by strain gauges adhered to each measurement point, comprising:

generating a composite sine wave signal that contains sine wave components having different frequencies;

applying the composite sine wave signal to each bridge circuit via a bandpass filter to apply to each bridge circuit a sine wave signal of a predetermined single frequency;

adding outputs from each bridge circuit to generate a sum output;

from the sum output, utilizing trigonometric function orthogonality to obtain at least touch force of touch force and touch direction acting on each measurement point;

comparing voltage amplitude measured at each measurement point to a reference voltage preset for each measurement point and adjusting the voltage amplitude of the sine wave signal of each frequency applied to the bridge circuit of each measurement point to control the gain of the bridge circuit of each measurement point to reduce any difference between measured and reference voltages.

2. A system for detecting tactile information on touch force acting on measurement points according to the method of claim 1, comprising:

a touch sensor, a controller, a signal output line for supplying the sum output of the touch sensor to the controller, and a gain control line for supplying the composite sine wave signal output from the controller to the touch sensor;

the touch sensor including a plurality of sensor units,

and an adding circuit for generating the sum output by adding the output from each sensor unit;

each touch sensor including a bridge circuit constituted by a plurality of strain gauges disposed at a measurement point, and a bandpass filter for applying to the bridge circuit a sine wave signal of a predetermined single frequency included in the composite sine wave signal;

the controller including an A/D converter for A/D conversion of the sum output supplied via the signal output line, an analyzer that, from the sum output converted by the A/D converter, of the touch force and touch direction acting on each measurement point, utilizes trigonometric function orthogonality to obtain at least the touch force acting on each measurement point, an automatic gain control circuit that compares voltage amplitude measured at each measurement point to a reference voltage preset for each measurement point and adjusts the voltage amplitude of each sine wave signal frequency applied to each sensor unit of the touch sensor to reduce any difference between the measured and reference voltages, and a D/A converter that generates and outputs the composite sine wave that includes the sine wave signals of each frequency with the adjusted voltage amplitude.